Comments on Smith, Zidar and Zwick (2019)

Emmanuel Saez and Gabriel Zucman — January 24, 2020.

Smith, Zidar and Zwick (2019),[1] henceforth SZZ, present estimates of US wealth inequality obtained by capitalizing income tax data as in Saez and Zucman (2016) but with three main differences. First, to estimate fixed-income claims, SZZ assume the rich have a higher interest rate than the rest of the population, in contrast to Saez and Zucman (2016) whose benchmark estimates assume that the interest rate is constant across the distribution. Second, SZZ estimate equity wealth by capitalizing dividends and capital gains but assign a lower weight to capital gains than Saez and Zucman (2016). Last, SZZ value shares in S-corporations by using formulas by industry of the type: wealth = a×profits+b×sales+c×assets. The first two adjustments reduce the top 0.1% wealth share compared to Saez and Zucman (2016), while the third one increases it. For their time-series graphs (e.g., their Figure 1), SZZ only include their first 2 adjustments (reducing wealth concentration) and exclude the third one.[2] Quantitatively, the different capitalization of interest income is the largest contributor to the divergence with Saez and Zucman (2016).[3]

We identify 4 main issues with the SZZ estimates. First, SZZ assume that the interest rate earned by the rich is the Moody's Aaa rate (6% on average in the 2000s, 4% in the 2010s). This is inconsistent with the existing evidence (from the SCF and matched estates-income tax data data) which shows that the interest rate of the wealthy (around 3% in the 2000s, 2% in the 2010s) is about twice lower than assumed by SZZ. As a result, SZZ under-estimate the fixed-income claims owned by the wealthy by a factor of about 2. Second, the SZZ methodology delivers an estimate of wealth for the top 400 richest Americans which is only 40% of the Forbes 400 total. Third, the SZZ methodology is not consistent with the rise in wealth concentration seen in the other key data source on wealth in the US, the Survey of Consumer Finances. Fourth, SZZ under-estimate wealth tax revenue by a factor of about 2, partly because of too low wealth levels at the top, partly because they simulate a tax on wealth at the adult level (with equal split of assets between spouses) rather than at the tax unit level.

Interest rate of the wealthy. A number of papers investigate how the interest rate on interest-bearing assets varies with wealth in the United States.

- Saez and Zucman (2016) match estates tax returns filed over the period 1997–2012 with income tax returns the year before death (see Saez and Zucman p. 547–551, in particular Figure V.B). They find interest rates of 3.0% on average over 2001–2008 for estates above $10 million (close to the aggregate rate of 2.7%), but higher-than-average interest rates at the top over 2009–2011 (2.2% for estates above $20 million vs. 1.4% on aggregate, a difference of a factor of 1.6).

- Bricker, Henriques & Hansen (2018, Table 1, col. 2) find similar patterns in the SCF: interest rates for the top one percent richest households of 3.0% on average for the 2001,

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[1] "Top Wealth in the United States: New Estimates and Implications for Taxing the Rich," 19 July 2019.

[2] Similarly, the estimates from SZZ reported in the issue of The Economist titled "Inequality illusions" (Nov. 30–Dec. 6, 2019), figure p.22, only include the 2 negative adjustments and excludes the positive one.

[3] A fourth change, capitalizing the property tax at the state level, has no significant effect on the national wealth distribution.

2004, and 2007 waves of the SCF (vs. 3.0% on aggregate over these 3 years), but higher-than-average interest rates at the top in 2010, 2013 and 2016 waves (2.0% for the top one percent wealthiest households vs. 1.1% on aggregate).

In sum, in both matched-estates income tax data and the SCF, (i) the interest rate of the rich appears to be around 3.0% before the Great Recession and around 2.0% after; (ii) the assumption of constant interest rates appears broadly reasonable until 2008–2009 but problematic after.

SZZ depart from these analyses by capitalizing the interest income of top 1% interest-income earners with the Moody's Aaa rate, which averaged 6.0% over 2000–2009 and 4.2% over 2010–2016. In recent years, the top 1% interest-income earners have earned about 70% of all taxable income (see, e.g., SZZ Figure 3A). Thus, SZZ assume that 70% of all taxable interest in the United States derives from assets that yield the Moody's Aaa yield. Since virtually all tax units in the top 1% of the interest-income distribution end up in the top 0.1% of the wealth distribution, in the SZZ methodology the top 0.1% wealthiest tax units have an interest rate which is very close to the Moody's Aaa rate, i.e., twice higher than the interest rate at the top of the wealth distribution seen in the SCF and matched estates-income tax data.


Rates of returns on fixed-income claims
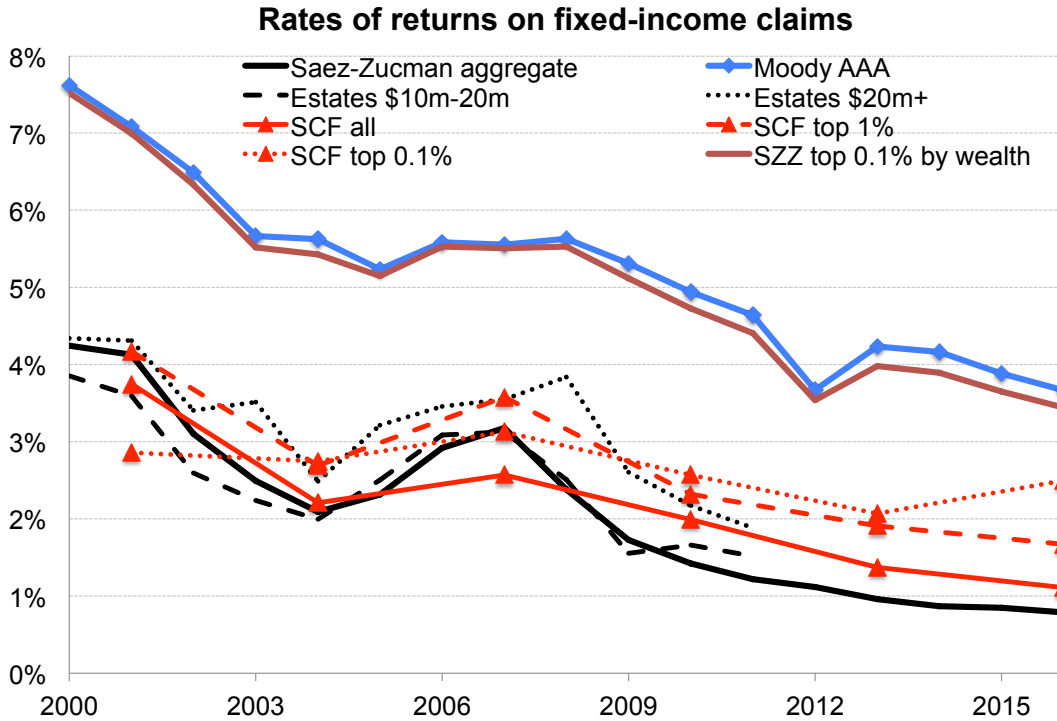
The available evidence thus suggests that the SZZ methodology under-estimates the amount of fixed-income assets owned by the top 0.1% by a factor of about 2. That is, one needs to multiply the fixed-income assets of their top 0.1% wealthiest adults by about 2 to obtain a yield consistent with the one seen in other sources. Doing this multiplication increases the SZZ top 0.1% wealth share (among equal-split adults) by 2.3 points in 2014, from 15.1% to 17.4%. This adjustment alone closes 60% of the gap with the benchmark capitalization estimates of Saez and Zucman (top 0.1% wealth share of 19.0% in 2014 among equal-split adults[4]), while preserving a large interest-rate differential between the wealthy and less wealthy after the Great Recession.

[4]SZZ (Table 1) report a "baseline" top 0.1% wealth share of 20.4% in 2014, which corresponds to the Saez and Zucman (2016) methodology when capitalizing capital gains for both rankings and shares. The benchmark

Top 400. The SZZ methodology generates only 40% of the wealth of billionaires estimated by Forbes Magazine. According to SZZ (2019, p. 34) billionaires owned $1.1 trillion in wealth in 2014. According to Forbes, the top 400 wealthiest Americans (who had wealth above $1.55 billion) owned $2.3 trillion in 2014. People with more than 1 billion and less than $1.55 billion add an extra $400 billion, for a total billionaire wealth of $2.7 trillion.[5] SZZ only capture 40% of that amount. Part of the reason for this gap is that SZZ consider wealth at the adult level while Forbes data are at the household level. After adjusting the SZZ data to move to tax units, SZZ still capture only 50% of Forbes billionaire wealth.

While it is possible that Forbes over-estimates the wealth of some billionaires, it seems unlikely that it does so overall by a factor of 2. There are cases of people who exaggerated their wealth to Forbes (e.g., Wilbur Ross). But we also know that the wealth of some SCF families not listed in the Forbes 400 is above the Forbes 400 threshold (Batty et al., 2019, Appendix F), which means that Forbes misses some billionaires. It is also notable that the recent Bloomberg billionaire index finds more US billionaire wealth than Forbes.[6]

As shown by the graph below, the benchmark Saez and Zucman (2016) capitalization method captures close to 100% of the Forbes 400 wealth. Correcting the SZZ estimates so that they match the amount of billionaire wealth at the top implied by Forbes (i.e., multiplying SZZ billionaire wealth by 2), without making any other correction, increases the SZZ top 0.1% wealth share from 15.1% in 2014 to 16.7%, closing 40% of the gap with Saez and Zucman (2016). Together, the billionaire correction and the interest-rate correction close almost $60\% + 40\% = 100\%$ (though not exactly 100% since they partially overlap) of the gap between SZZ and the Saez and Zucman (2016) top 0.1% wealth share.

Wealth of the top 400 richest Americans in 2014
(Trillion of US$)

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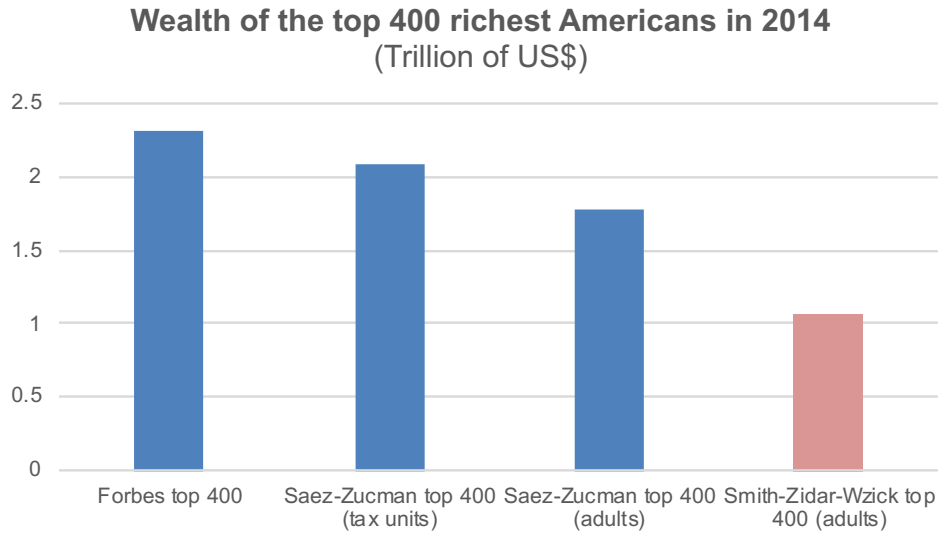
series of Saez and Zucman (2016), however, capitalize capital gains only to compute wealth shares; to rank tax units only dividends are capitalized (see discussion of this mixed method in Saez and Zucman, 2016, p. 534). Post-2012 series following the methodology of Saez and Zucman (2016) are published in Piketty et al. (2018).

[5]We make the classical assumption that the tail of the wealth distribution is Pareto distributed. As the average wealth of the Forbes 400 in 2014 ($5.7b) was 3.4 times the threshold to belong to the Forbes 400 ($1.55b), the corresponding Pareto parameter is $a = 3.4/(3.4 - 1) = 1.4$. Standard calculations imply that the wealth between $1bn and $1.55bn is $[(1.55/1)^{(a-1)} - 1] = 19\%$ of the wealth above $1.55bn, i.e., $440 billion.

[6]https://www.bloomberg.com/billionaires/

Consistency with SCF. The SZZ methodology is not consistent with the rise in wealth concentration seen in the other key data source about wealth in the US, the Survey of Consumer Finances (SCF). According to the official SCF estimates,[7] the top 1% wealth share has increased by 9.1 points between 1989 and 2016, from 29.7% in 1989 (the first year of the modern SCF) to 38.8% in 2016 (the latest year available). According to SZZ (Figure 1 Panel B), the top 1% wealth share has increased by 4.2 points only from 1989 to 2014 (their latest year). This is less than half the rise recorded in the official SCF data.

The SCF, by design, excludes the Forbes 400. As a result, the SCF misses most of the wealth of billionaires, which according to Forbes has increased particularly fast since the 1980s.[8] Adding the Forbes 400 wealth to the official SCF estimates, the top 1% wealth share has increased 9.9 points over 1989–2016 (vs. +11.3 points in the benchmark estimates of Saez and Zucman, 2016, and +4.2 points only in SZZ over 1989–2014).

Top 1% wealth share in the United States
(Capitalized incomes vs. SCF)
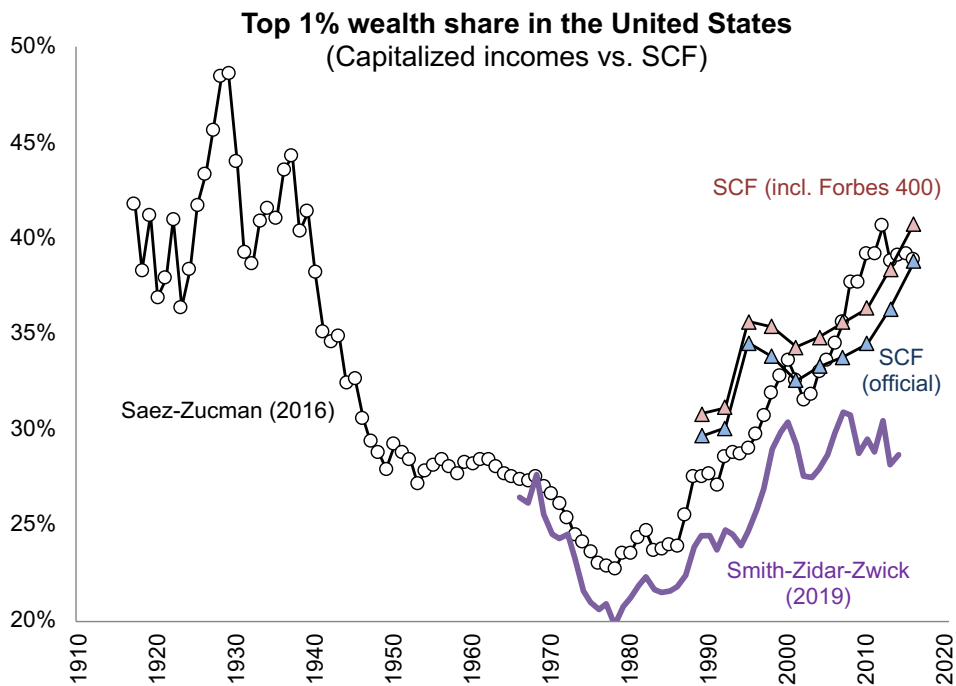
The divergence between SZZ and the SCF is particularly striking since the beginning of the 21st century. According to the SCF, the top 1% wealth share has increased 6.2 points between 2001 and 2016 (6.4 points when adding the Forbes 400). According to the Federal Reserve Distributional Financial Accounts[9] (based on the SCF, but anchored to the Financial Accounts totals and available at the quarterly frequency), the top 1% wealth share has increased 5.1 points from 2001Q3 to 2014Q3. By contrast, according to SZZ, over the same period (2001–2014), the top 1% wealth share has *fallen* by 0.5 point. SZZ fail to capture the rise in wealth

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[7]https://www.federalreserve.gov/publications/files/scf17.pdf box 3 pp. 10-11, Figure B.

[8]In 2016, billionaire wealth is $583 billion in the SCF, while the Forbes 400 (400 households with wealth above $1.7 billion) alone owns 2.4 trillion according to Forbes, implying total billionaire wealth of $3 trillion (using the same Pareto interpolation as above: As the average wealth of the Forbes 400 in 2016 ($6.0b) was 3.5 times the threshold to belong to the Forbes 400 ($1.7b), the corresponding Pareto parameter is $a = 3.5/(3.5-1) = 1.4$, and the wealth between $1bn and $1.7bn is $[(1.7/1)^{(a-1)} - 1] = 24\%$ of that above $1.7bn, i.e., $566 billion).
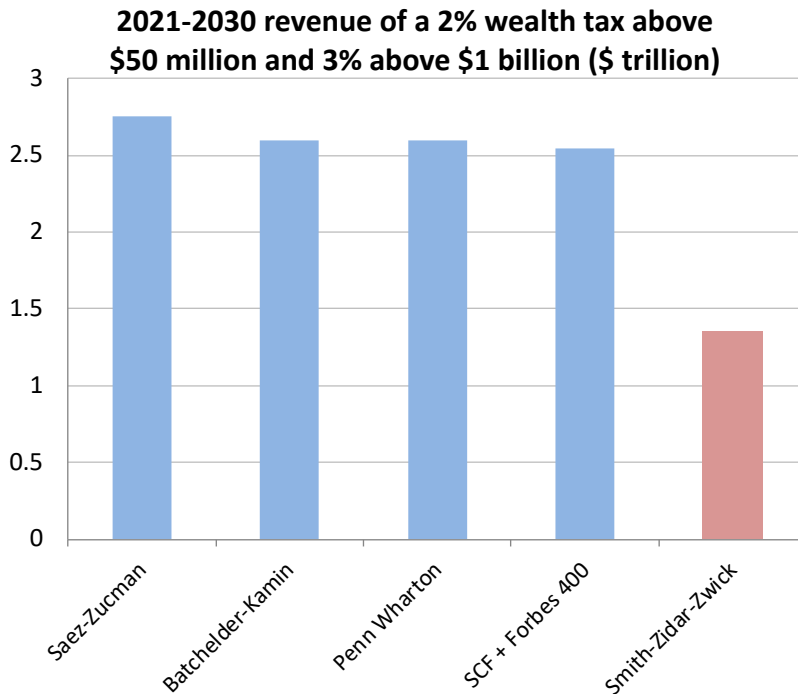
[9]https://www.federalreserve.gov/releases/efa/efa-distributional-financial-accounts.htm.

concentration observed in all existing data sources (SCF, Distributional Financial Accounts, Forbes, and estates tax data; on the latter, see Saez and Zucman, 2019) since the turn of the century. SZZ do not provide an explanation for this divergence or a reconciliation.

Wealth tax revenue. SZZ under-estimate wealth tax revenue by a factor of about 2, partly because of too low wealth levels at the top, partly because they simulate a tax on wealth at the adult level (with equal split of assets between spouses) rather than at the tax unit level.

SZZ (2019, eq. 16 p. 34) estimate the mechanical revenue from a wealth tax of 2% above $50 million and 3% above $1 billion at $76 billion in 2014, assuming no tax avoidance. `Vox.org` publishes a wealth tax calculator using the SCF + Forbes 400. In 2016, according to this calculator, a tax of 2% above $50 million and 3% above $1 billion (with no avoidance) would have generated $200 billion.[10] The SZZ estimate is much lower than other sources.

A number of authors have estimated the revenues from a wealth tax over the 10-years budget window 2021–2030 and applying a 15% tax avoidance/evasion discount (Batcheleder and Kamin, 2019, Table A.2; Penn Wharton Budget Model, 2019;[11] Saez and Zucman, 2019). To make the SZZ estimates comparable to these estimates, we age the SZZ estimate to 2021 (based on the observed growth of aggregate wealth over 2014-2019, +37%, and assumed growth rate of 4% in 2020 and 2021), apply a 15% avoidance discount, and convert to 10-years revenue by multiplying by 12 (corresponding to a nominal annual growth rate of 4.0%). The figure below shows that SZZ is an outlier.

2021-2030 revenue of a 2% wealth tax above $50 million and 3% above $1 billion ($ trillion)

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[10]`https://www.vox.com/policy-and-politics/2019/2/12/18211833/wealth-tax-calculator-warren-sanders`.
[11]PWBM has not publicly released its estimates of a 2%/3% tax, only an estimate of a 2% tax above $50 million and 6% above $1 billion ($2.7 trillion over 2021–2030). According to private communication with PWBM's Richard Prisinzano, the PWBM estimates that a 2%/3% tax would generate $2.6 trillion over 2021–2030. The 2%/6% revenue estimates assumes a 54% avoidance rate for people subject to the 6% rate, which explains why the 2%/6% tax yields only an extra $100 billion compared to the 2%/3% tax, according to PWBM.

SZZ (2019, ft. 46) note that their current revenue estimate does not include yet their private business adjustment, which they note will likely increase their revenue estimate by about 20%. Even so, a gap of a factor of 1.6–1.7 would remain with the other available estimates.

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